DUDKO, D.A.; RUBLEVSKIY, I.N.; CHERNEGA, D.F.

Peculiarities of hydrogen behavior in the automatic welding under flux process. Avtom.svar. 10 no.6:28-34 N-D '57.

(MIRA 11:1)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.

(Electric welding) (Hydrogen)

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 44 (USSR) SOV/137-58-11-22137

AUTHORS: Yavoyskiy, V. I., Chernega, D. F., Telesov, S. A., Troskunov, Ya. L., Ofengenden, A. M., Bekker, N. I.

TITLE: D-C Degassing of Steel in Ladles and Molds (Degazatsiya stali v kovshakh i izlozhnitsakh pri pomoshchi postoyannogo elektricheskogo toka)

PERIODICAL: Sb. Mosk. in-t stali, 1958, Vol 38, pp 209-225

ABSTRACT: Carbon and low-alloy steels (65G, 55S2, 10G2A, Nr 45, and others) were the objects of investigation. In degassing in molds, either the graphite nozzle or the stool serves as anode, while a graphite electrode immersed in the mold serves as cathode. Current is transmitted for 10-30 min, usually immediately after the ingot is poured. The ingots are 3.1-3.4 t in weight. Samples of the metal (Me) for H determination by the Batalin method are taken from the test ingot and the next one adjacent thereto (the control ingot). Seven ingots were treated in this manner. Increase in current density from 0.06 to 0.17 amps/cm^2 raises the [H] in the top of the test ingot to more than in the control ingot. The difference in [H] attains 15.84

Card 1/2

$cm^3/100$ g. Samples of Me taken from rolled ingots (100-160 mm diam) testify to positive segregation of H, a uniform distribution of [N], and some improvement in macrostructure. When Me is degassed in 125-t ladles, the current is delivered through carbon coils mounted on dummy stoppers. The current, of 0.02-0.25 $amps/cm^2$ density, is transmitted either while the metal is in the ladle or then and, in addition, when it is poured. 12 heats were run. Samples of Me were taken during pouring from the molds. In the experimental heats, the [H] in the ladle was reduced relative to the [H] before tapping by 1.5-2 $cm^3/100$ g and was 0.5-1.0 $cm^3/100$ g lower than in ordinary heats. The Me treatment thus described does not affect the content and distribution of N, O, or nonmetallic inclusions.

A. S.

Card 2/2

CHERNEGA, D. F.: Master Tech Sci (diss) -- "Investigation of the behavior of hydrogen in steel under the influence of electric current". Kiev, 1958. 17 pp (Min Higher Educ Ukr SSR, Kiev Order of Lenin Polytech Inst), 100 copies (KL, No 5, 1959, 152)

CHERNEGA, D. F.

СЛИТОК И СВОЙСТВА СТАЛИ

Д.Ф.Чернега	Исследование влияния электрошлакового обогрева прибыльной части слитков, переплавляемых электродом, на поведение водорода и свойства металла.
К.С.Просвирин Л.И.Крупман	Распределение неметаллических включений в слитках кипящей стали.
Ю.А.Нехендзи Н.Г.Гиршович И.Я. Белых	Кинетика затвердевания железоуглеродистых сплавов в песчаных, металлических и водоохлаждаемых формах.
В.Г.Грузин	Структурообразование в зависимости от температурного поля [illegible] стали.
С.А.Недзвецкий В.К.Новицкий А.С.Лебедь	Влияние толщины стенки изложницы на качество слитков из сталей [illegible].
В.Г.Кулеев С.М.Гаунов	Поведение экзогенных включений в слитке [illegible] стали.
В.М.Тагеев Ю.Д.Смирнов	О связи дендритной и зональной химической неоднородности слитков и отливок в процессе кристаллизации стали.
В.М.Тагеев Ю.Д.Смирнов	Влияние выделения газов при кристаллизации стали на химическую неоднородность слитков и отливок.
А.Н.Морозов В.С.Рожанский	Механизм образования сотовых пузырей в слитках кипящей стали.
Ю.А.Нехендзи В.П.Кольцов	Поглощение водорода сталью при заполнении литейной формы.

Report submitted for the 5th Physical Chemical Conference on Steel Production, Moscow, 30 Jun 1959.

25(1)

AUTHOR: Chernega, D.F., Molotkov, B.A., Kisel', N.N., Trofimova, K.G. SOV/125-59-1-13/15

TITLE: The Influence of Electric-Slag Heating of the Ingot Shrinkage Head by Graphitized Electrode on the Properties of Metal (Issledovaniye vliyaniya elektroshlakovogo obogreva pribyl'-noy chasti slitka grafitizirovannym elektrodom na svoystva metalla)

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 1, 81-86 (USSR)

ABSTRACT: The macrostructure of a heated ingot has, in comparison with a non-heated ingot, the following features: shrinkage holes, better toughness of metal, less-marked low tapers and V-type segregation. The electric-slag heating of 3-ton ingots performed by direct current of positive polarity 1000 a and 50 v, results in no noticeable change in the chemical content of the metal. The concentration of sulphur in the heated ingot is by 0.002 to 0.005% less than in the unheated ingot. Under the influence of direct current, the content of hydrogen in the ingot body decreases. As a rule, the remaining hydrogen will shift

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25(1)
SOV/125-59-1-13/15
The Influence of Electric-Slag Heating of the Ingot Shrinkage Head by Graphitized Electrode on the Properties of Metal

to the negative pole. Electric-slag heating by means of direct current is most suitable for reducing hydrogen in the ingot and for improving the mechanical properties in the metal. There are three graphs, one sketch, one photo, one table, and ten Soviet references.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Politechnical Institute). Zhdanovskiy metallurgicheskiy zavod im. Il'icha (Zhdanov Metallurgical Plant imeni Il'ich)

SUBMITTED: July 7, 1958

Card 2/2

CHERNEGA, D.F.; MESHKOV, V.V.

Nonmetallic inclusions in ingots heated by the electric slag method. Avtom.svar. 13 no.2:79-82 F '60.
(MIRA 13:5)

1. Lenina Kiyevskiy politekhnicheskiy institut (for Chernega)
2. Zhdanovskiy metallurgicheskiy zavod im.Il'icha (for Molotkov).
(Steel ingots) (Steel--Defects)

S/137/62/000/003/019/191
A006/A101

AUTHORS: Chernega, D.F., Dudko, D. A., Tyagin-B[illegible]ous, G. S.

TITLE: Electric-slag heating and feeding of ingots

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 42, abstract 3V262 ("Sb. nauchn. tr. Zhdanovsk. metallurg. in-t", 1961, no. 7, 266-275)

TEXT: In electric-slag heating the assembly of bottom plates is made as in conventional teeming. The liquid metal surfaoe is filled with a thermite mixture after filling up the riser; during the burning of the mixture slag is being formed which promotes the formation of a slag pool from the synthetic mixture (CaO, CaF_2 and Al_2O_3). It is expedient that the slag contained 8 - 10% oxides of the metal alloying elements. The slag layer should be > 40 - 50 mm thick. Electric-slag heating can be conducted both on d-c and a-c. The magnitude of the power supplied is regulated by the immersion depth of the carbon electrode into the slag pool. The authors compared the properties of metal from conventional 3-ton 60XH(60KhN) steel ingots and of one that was subjected to electric-slag heating. Heating was performed on d-c at I = 1,000 amp; U = 50 v, heating time 90 minutes. The flux was composed of 50% CaO, 30% CaF_2; 20% SiO_2. Flux

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Electric-slag heating and feeding of ingots

consumption was 20 kg/t of steel. It was established that electric slag heating eliminates almost completely shrinkage cavities, improves density and macrostructure of the metal. Noticeable chemical heterogeneity of the metal is not observed in the ingot. Heating on d-c of direct polarity (minus on the electrode) promotes a reduction of the H content in the ingot. Simultaneously with a higher yield of finished product, electric-slag heating improves the mechanical properties of metal. In electric-slag feeding a consumable electrode is used which is made of the same metal as the ingot. Pouring gates or steel rods of 30 - 100 mm in diameter are used as electrodes. In electric-slag feeding, simultaneously with heating, the top section of the ingot is continuously filled-up with liquid metal of the consumable electrode. Flux consumption (60% CaO, 20% CaF_2, 20% Al_2O_3) is 15 - 25 kg/t of steel. The volume of the liquid pool for electric-slag feeding must be 4 - 5 times greater than for electric-slag heating. Electric-slag feeding makes it possible to reduce considerably zonal heterogeneity and the volume of the lower cone, and to raise the yield of finished product by 18 - 20%. The plastic properties of the metal in the top portion of the ingot are higher than in the lower portion.

P. Arsent'yev

[Abstracter's note: Complete translation]

Card 2/2

CHERNEGA, D.F.

6

30879
S/148/61/000/009/001/012
E071/E135

18.3200

AUTHORS: Yavoyskiy, V.I., Chernega, D.F., Dudko, D.A., Tyagun-Belous, G.S., Bekturganov, Sh.Sh., Bocharov, V.A., Agamalova, L.L., Molotkov, V.A., Yakobshe, R.Ya., and Potanin, Ye.M.

TITLE: Electrolytic phenomena in the process of electroslag heating of ingots

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.9, 1961, 32-43

TEXT: Electroslag heating of ingots is based on the ionic nature and structure of slag. On passing a current through the slag, situated on the surface of the shrinkage head, a considerable amount of heat is evolved, sufficient to maintain the slag and metal in the upper part of the ingot during its crystallisation in the molten state. The object of the present investigation was to elucidate the influence of the kind of electric current on the processes taking place during electroslag heating of ingots. It is advantageous to carry out the heating of the ingot tops in such

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Electrolytic phenomena in the process...

a manner that in addition to increasing the yield of good metal there should be an improvement in the metal quality resulting from the electrolytic effect and also from the transfer of a part of the segregating elements into the slag. The experiments were made with four ingots of a square cross-section, weighing 3.4 tons, of steel 10Г2СД (10G2SD), smelted in 75 ton basic open hearth furnaces. The electroslag heating was with direct and alternating current. For the first ingot the electrode introduced into the head part was connected to the cathode and the plus to the ingot (straight polarity); the second ingot was heated with direct current of reverse polarity (minus to the bottom of the mould, plus to the electrode in the head part); the third ingot was heated with a 50 c.p.s. alternating current; the fourth ingot was cast by the usual practice and was used as a blank experiment. The first three ingots were top poured through an intermediate funnel and the fourth ingot was bottom poured. A generator capable of producing 1000 A at 60 V was used for heating with direct current. The heating conditions were as follows:
voltage 48 V, current for the first 60 minutes 950 A and then

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Electrolytic phenomena in the process..

700 A; the duration of heating 90 minutes. The flux for the formation of slag consisted of 25% fluorospar, 45% finely crushed freshly ignited lime, 30% chamotte powder. The ingots were rolled into slabs 500 x 250 mm. Four templets were cut from each slab and then cut into strips from which test specimens were made. Non-metallic inclusions were determined metallographically and electrolytically. It was found that the distribution of non-metallic inclusions in the ingot was the most advantageous on heating it with direct current of "straight" polarity. This type of heating lowers chemical non-uniformity in comparison with ingots cast by the usual works technology and heated with alternating current, or direct current of reverse polarity. There is a tendency for sulphur to be shifted towards the positive pole, whereupon sulphur near the positive pole is distributed unevenly along the cross-section of the ingot in the form of segregation "spots". No shift of carbon towards the negative pole was established. During the heating with direct current of straight and reverse polarity, in addition to electrolytic phenomena, the Perrin-Tochinskiy effect leading to the refining

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Electrolytic phenomena in the process...

of the metal of the head part of the ingots was observed. No noticeable effect of direct current on changes in the content and distribution of nitrogen in the rolled metal was observed. It was established that the content of hydrogen in the shrinkage head decreases during crystallisation of the ingot heated with a direct current of reverse polarity and increases with direct polarity (minus on the electrode). The mechanical properties of the metal of the ingot teemed with heating by current of direct polarity are most uniform throughout the whole volume of the slab. The specific gravity of the metal of all the ingots was almost the same. The pickling ability of the metal (weight loss of cylindrical specimens in a solution of 65 wt. parts of HCl, 25 wt. parts of H_2SO_4 and 10 wt. parts of water at 70 °C during 40 minutes) along the whole slab is the highest on heating with direct current of "straight" polarity and lowest on heating with direct current of reverse polarity. On heating with alternating current of an industrial frequency the quality of the ingot metal was better than that of the "blank" ingot and was nearly the same as on heating with direct current of "straight" polarity.

30879
S/148/61/000/009/001/012
E071/E135

Electrolytic phenomena in the process...

There are 6 figures, 4 tables and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: May 24, 1961

Card 5/5

S/765/61/000/000/001/003

AUTHOR: Chernega, D. F.

TITLE: Investigation of the effect of slag-resistance heating of the riser portion on the comportment of the Hydrogen and the properties of the metal.

SOURCE: Slitok i svoystva stali; trudy V konferentsii po fiziko-khimicheskim osnovam proizvodstva stali. Moscow, Izd-vo AN SSSR, 1961, 3-11.

TEXT: The paper describes an experimental investigation intended to improve the quality of the riser portion of ingots through the application of the so-called "electroslag" (slag-resistance) heating of castings for rolling purposes (3 ton) and for forging purposes (19 ton). The slag-resistance (SR) heating method employs the ionized nature of the slag to convey an electric current between the electrode and the metal (slag) without the formation of an open arc. The electrode face is immersed in the slag which protects the metal from both the atmosphere and any carburizing effect. The SR method is characterized by heating by means of DC, and the current passes through the metal within the mold during the entire crystallization time for rolling ingots and for 3.5-4 hrs during the heating of forging ingots. The method of the investigation is explained. The tests were made on 60XH (60KhN) steel smelted by the scrap process in a basic open-hearth furnace. A schematic

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cross-section of the mold and the equipment for the SR heating of the riser portion of the ingot is shown. The riser portion of the experimental mold was covered with 8-10 kg of Thermit mixture to avoid the formation of a crust in the solidifying metal. The electrode was then inserted into the central region of the riser portion, and 20-25 kg of slag-producing mixture were added. This mixture consisted of freshly burnt lime (50%), fluorspar (20%), and quartz sand (20%). The specimens for the determination of the H content in the riser portion of the ingots were taken from a depth of 200-300 mm below the metal-slag interface by means of quartz pipes equipped with Al-foil tips. The specimens were quickly quenched in water and were placed in a Dewar vessel with dry ice (CO_2), where they were stored pending analysis. The H content was determined by means of the vacuum-heating method at 650°C in an A. N. Morozov equipment. Tests performed with a reverse-polarity DC in rolling ingots established the following: (1) The H content in the crystallizing metal is decreased; (2) the macrostructure of the heated ingot is characterized by a better density and less marked V-shaped segregation; (3) a 60-v, 100-amp, DC does not produce any noticeable electrolytic effect on the C, Mn, Si, Ni, Cr, P, and S content; (4) the increase in yield of high-grade metal is accompanied by an improvement of its mechanical properties. The SR heating of forging ingots established that the H content in the riser portion of the ingots depends on the chemical composition of the slag-forming fluxes and the type of current employed. Thus, for example,

a 50-54-v, 2,000-amp, AC produced an increase in H content in the riser portion of the ingot initially, and then the maintenance of a constant H level. Use of a direct-polarity, 30-40-v, 900-1,000-amp, DC produced a reduction in the H concentration in the metal when the riser portion is covered with slag mixture, but not in the presence of a Thermit mixture [the graph shows the opposite effect; Reviewer's Note]. There are 5 figures and 12 Russian-language Soviet references. The participation of V. I. Dorokhov, D. P. Antonets, and V. M. Bednyakov in the performance of this investigation is acknowledged.

S/148/61/000/009/002/012
E071/E135

AUTHORS: Bektursunov, Sh.Sh., Yavoyskiy, V.I., Chernega, D.F., Tyagun-Belous, G.S., and Sytova, N.M.

TITLE: The behaviour of hydrogen during electroslag heating and supplementary feeding of ingots

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.9, 1961, 44-53

TEXT: The authors carried out experiments on electroslag heating and supplementary feeding of 8.2 ton sheet ingots of a low alloy steel MK 10ГС Д (10G2SD) on a large scale experimental installation in which samples of the metal and slag were taken during the course of crystallisation of the ingots for the determination of hydrogen. The chemical composition of the steel was: $\leq$ 0.12% C; 1.3-1.65% Mn; 0.8-1.1% Si; $\leq$ 0.30% Cr; $\leq$ 0.30% Ni; 0.15-0.30% Cu; 0.02% Ti, $\leq$ 0.040% S and P. The process was carried out as follows: After filling the mould up to about one third of the height, a slag forming mixture was placed on the surface of the metal; 10-12 min after filling the mould, three electrodes were introduced into the slag, current (55-60 V,

1000-1400 A) was switched on and an additional amount of the slag forming mixture added so as to form a slag bath 80-100 mm deep. The duration of heating and supplementary feeding was 60-65% of the time necessary for the complete crystallisation of the ingot in normal production (about 2 hours). The slag forming mixture consisted of 40 kg chamotte powder, 60 kg lime and 10 kg spar concentrates. The slag formed had the following composition: 26-28% SiO_2; 38-40% CaO; 16-18% Al_2O_3; 1.0-1.5% FeO; 0.2-0.6% Fe_2O_3; 1.0-1.3% MnO; 5.0-7.0% MgO; 6-8% CaF_2; 0.02-0.03% P_2O_5; and 0.006-0.010% S. The lining of the top was made from magnesite brick. Samples of the metal were taken from the shrinkage head with a silica tube and samples of the slag from the space between the central and one of the peripheral electrodes with a metallic spoon. The extraction of the gas from the samples was done at 950-1000 °C at 3-5 x 10^{-2} mm Hg. To elucidate the influence of the heating on the residual hydrogen content in the metal, four transverse and one longitudinal templets were cut from three ingots (one of the ingots teemed by the usual technology was used for comparison). It was found that in the shrinkage head and 00 mm below the head, the content of hydrogen

The behaviour of hydrogen during ...

in the ingots teemed with the heating was somewhat lower than in the usual ingots; in the remaining parts of all three ingots the hydrogen content was approximately the same. The average hydrogen contents were as follows: in the usual ingots 4.98 $cm^3/100$ g; in the ingot teemed with electroslag supplementary feeding 4.05 $cm^3/100$ g; in the ingot teemed with electroslag heating 4.09 $cm^3/100$ g. It is concluded that electroslag heating or supplementary feeding of the head of the ingots secures the transfer of some of the hydrogen from the metal to the slag, thus lowering somewhat the concentration of hydrogen in the whole system of the ingots but particularly in their head part. The transfer of hydrogen into the slag bath takes place not only due to the Perrin-Tochinskiy effect, but also due to the electrolytic transfer of OH^- ions and their discharge on electrodes during the half period when the electrodes are acting as anodes. O.A. Yesin, V.I. Yavoyskiy, G.N. Batalin and V.S. Baykov are mentioned for their contributions in this field.
There are 7 figures and 13 references: 11 Soviet-bloc and 2 Russian translations of non-Soviet publications.

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The behaviour of hydrogen during ... S/148/61/000/009/002/012
E071/E135

ASSOCIATION: Moskovskiy institut stali, Kiyevskiy politekhnicheskiy institut, Institut elektrosvarki, Zhdanovskiy metallurgicheskiy zavod
(Moscow Steel Institute, Kiyev Polytechnical Institute, Electrowelding Institute, Zhdanov Metallurgical Works)

SUBMITTED: May 23, 1961

Card 4/4

S/133/62/000/007/002/014
A054/A127

AUTHORS: Yavoyskiy, V.I., Professor, Doctor of Technical Sciences; Bekturs-sunov, Sh.Sh., Engineer; Chernega, D.F.; Tyagun-Belous, G.S.; Dudko, D.A.; - Candidates of Technical Sciences

TITLE: Electroslag heating and additional feeding in casting 10ГСД (10G2SD) slabs for sheet rolling

PERIODICAL: Stal', no. 7, 1962, 611 - 615

TEXT: The new "electroslag-heating" method described by G.S. Tyagun-Belous and D.A. Dudko (Ref. 1, Avtomaticheskaya svarka, no. 9, 10, 1956, no. 8, 11, 1958) eliminates the drawbacks in the usual methods of reducing metal losses in the riser head. In the upper part of the ingot mold a mixture of 45% crushed chamotte and 55% fine-graded coke is spread on the metal surface, in an amount of 2 kg/ton steel, then 14 kg/ton slag forming materials are added. Through the layer forming from these elements which smelts and becomes electro-conductive, a current of industrial frequency is led. The slag layer developing in the dozzle of the mold is 80 - 100 mm thick. In the electroslag-heating method

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carbon electrodes (50 - 150 mm in diameter) are used. If this process is combined with additional feeding, 80 - 100-mm diameter self-baking electrodes of the same grade that is being smelted are used. The ingots cast by the first me.... weighed 7.65 tons, those of the combined method 7.3 - 7.4 tons, while the standard ingots were 8.2 tons. The slag forming elements used were chamotte powder, lime, fluorite. Shrinkage cavities were not found in the ingots cast with electroslag heating, but the highest density was obtained, when electroslag heating and additional feeding were applied. The test ingots and one control ingo were examined for chemical nonhomogeneity, the amount of residual hydrogen, pickling and mechanical properties. The positive liquation of carbon was 7% in the ingot heads subjected to additional feeding, 2% in case of electroslag heating, and 200% for the control ingot. The corresponding values for the sulfur content were 0.0 and 10% and for phosphorus 0.5 and 50%. The decrease of liquation can be explained by the activity of the slag layer, which absorbs the additives from the smelted metal at their interface. This process is considerably intensified by the convective flows circulating at a rate of about 4 m/min in the ingot mold during crystallization, entraining liquid metal from the lower, solidifying parts of the ingot upward to the riser, i.e., to the electrical-

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308510004-0"

Electroslag heating and additional feeding in ....

ly heated slag layer. For the same reason the hydrogen content of the ingots also decreases. In the test ingots produced with electroslag heating the hydrogen content was 4.09 cm^3/100 g, in the ingot with additional feeding 4.05 cm^3/ /100 g, and in the control ingot 4.98 cm^3/100 g. The effect of convective flows was investigated by radiometry, using a P^{32}-50 millicurie-isotope. As to mechanical properties, the highest values were found in ingots treated by electroslag heating, without additional feeding: σ_B = 50 - 56 and σ_s = 37 - 42 kg/mm^2; in the riser part of the ingot the highest mechanical parameters were obtained for ingots with additional feeding: σ_B = 50 - 55, σ_s = 40 - 45 kg/mm^2. The effect of the quality of current on the properties of the ingots was also studied by means of a d-c welding generator (1,100 amp, 40 v) and 3.4 ton 10G2SD ingots. The highest parameters and the most uniform distribution of elements were found in ingots heated by direct current with a direct polarity. Similar results can be obtained also with alternating current of industrial frequency, which is important from the practical point of view. If electroslag heating of the riser is applied, the saving in metal is 6 - 7%; if additional feeding is also applied, it is 10 - 11%. The riser volume can be reduced by 3 - 5%. It is also possible to dispense with the riser completely. The methods should be ap-

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S/133/62/000/007/002/014
Electroslag heating and additional feeding in A054/A127

plied mainly for carbon steel and low-alloy steel ingots for heavy-duty products. There are 3 figures.

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YAVOYSKIY, V.I., prof., doktor tekhn.nauk; BEKTURSUNOV, Sh.Sh., inzh.; CHERNEGA, D.F., kand.tekhn.nauk; TYAGUN-BELOUS, G.S., kand.tekhn.nauk; DUDKO, D.A., kand.tekhn.nauk; Prinimali uchastiye: MOLOTKOV, V.A.; BELYAYEV, Yu.P.; YAKOBSHA, R.Ya.; AGAMALOVA, L.L.; CHEKALENKO, G.A.; BOCHAROV, V.A.; KISSEL', N.N.; POTANIN, Ye.M.; SYTOVA, N.M.

Electric slag heating and additional feed of large sheet billets made of 10G2SD steel. Stal' 22 no.7:611-615 Jl '62. (MIRA 15:7)

(Steel ingots) (Rolling (Metalwork))

CHERNEGA, G.V. (Moskva)

Vitamin B_{12} in the treatment of chronic benzene poisoning.
Gig. truda i prof. zab. 4 no.12:21-27 D '60. (MIRA 15:3)

1. Institute gigiyeny truda i profzabolevaniy AMN SSSR.
(BENZENE—TOXICOLOGY)
(CYANOCOBALAMINE)

CHERNEGA, I.

On the use of Griffin wheels. Zhel.dor.transp. no.9:78-79 S'47. (MLRA 8:12)

1. Nachal'nik vagonno-kolesnykh masterskikh stantsii Tayga Tomskoy zheleznoy dorogi
(Wheels)

KOLGANOV, G.S.; PAVLENKO, I.I.; GETMANETS, Zh.S.; CHERNEGA, I.L.; SKOBKIN, M.F.

Using trays with ceramic inserts for the top pouring of steel.
Stal' 23 no.6:515-516 Je '63. (MIRA 16:10)

1. Krivorozhskiy metallurgicheskiy zavod.

CHERNEGA, I.N., inzhener (St. Belove)

Regulate the technology of producing seamless rolled wheels and rims. Zhel. dor. transp. 39 no.3:80 Mr '57. (MLRA 10:4)

1. Nachal'nik vagonoremontnykh masterskikh Tomskoy dorogi.
(Car wheel)

CHERNEGA, I.N., inzh.

Improving the design of gondola cards. Zhel.dor.transp. 41 no.8:56-58 Ag '59. (MIRA 12:12)

1. Nachal'nik Belovskikh doroshnykh vagonoremontnykh masterskikh.
(Railroads--Freight cars)

CHERNEGA, I.N., inzh. (g.Belovo)

Using new methods for repairing trap doors of gondola cars.
Zhel.dor.transp. 42 no.6:65-67 Je '60. (MIRA 13:7)

1. Nachal'nik Belovskikh vagonoremontnykh masterskikh.
(Railroads--Freight cars)

CHERNEGA, I.N.

At the foundation of the study of advanced practices. Transp. stroi. 14 no.11:42-43 N '64. (MIRA 18:3)

1. Direktor Belovskogo liteyno-mekhanicheskogo zavoda.

TRIPOL'SKIY, A.A.; CHERNEGA, L.G.

Prospects for the utilization of potassium carbonate in the national economy. Khim.prom. no.9:675-677 S '63. (MIRA 16:12)

1. Nauchno-issledovatel'skiy institut osnovnoy khimii.

CHERNEGA, L.G. [Cherneha, L.H.]

Economic efficiency of capital investments in the expansion of the mineral fertilizer industry in the Ukrainian S.S.R. Khim. prom. [Ukr.] no.1:73-75 Ja-Mr'63 (MIRA 17:7)

1. Nauchno-issledovatel'skiy institut osnovnoy khimii.

PUSHKAR, R.G. [Pushkar, R.H.]; CHERNEGA, L.G. [Cherneha, L.H.]

Utilization of the local sources of raw materials for the manufacture of sulfuric acid. Khim. prom. [Ukr.] no.2:70-72 Ap-Je '63. (MIRA 16:8)

ZAK, Ye.G.; CHERNEGA, L.G.

Spatial distribution of frontal clouds of the upper layer. Trudy TSAO no.39 [illegible]4-38 '62. (MIRA 15:6)
(Clouds)

RYDNIK, V L., kand. ekonom. nauk; CHERNEGA, L.G.

Technological and economic comparison of silica white production methods. [Trudy] NIOKHIM 15:110-119 '63.
(MIRA 18:2)

CHERNEGA, M.

"Belles-lettres and popular scientific literature in Geography lessons, fifth through seventh grade"; textbook for teachers by M.A.Solomovich. Reviewed by M.Chernega. Geog.v shkole 23 no.1:92-93 Ja-F '60. (MIRA 13:5)
(Geography--Study and teaching)
(Solomovich, M.A.)

CHERNEGA, N. A.

"Determination of Latitude of Kiev Astronomical Observatory From Observations 1949-1950," Publikatsii Kievsk. astronom. observ.,

The latitude of the meridian circle of the Kiev Astronomical Observatory is determined by means of the 47 mm vertical Repsold circle (diameters of the circles 29.4 and 21.6 cm) from observations of zenith distances of 286 stars. The final result is $50^{\circ}27'11''.98 \pm 0''.10$. (RZhAstr, No 4, 1955)

SO: Sum. No. 568, 6 Jul 55

CHERNEGA, N.A.

Determining the latitude of the Kiev Astronomical Observatory from observations made in 1949-1950. Publ.Kiev.astron.obser. no.5:155-168 '53. (MLRA 7:6)

(Latitude)

CHERNEGA, N.A.

Observation of right ascensions of FKSZ stars on the meridian-circle of the Astronomical Observatory of Kiev University in 1951-1954. Trudy KAO 2:469-507 '58. (MIRA 13:4)

(Stars--Observations)

CHERNEGA, N.A.

Catalog of right ascensions of stars (FKSZ) compiled according to observations on the meridian circle of the Astronomical Observatory of the Kiev State University in 1951-1954. Publ.KAO, 18:68-101 '59. (MIRA 14:9)
(Stars--Catalogs)

CHERNEGA, N.A.

Investigating axle journals of the meridian circle of the Astronomical Observatory of the Kiev State University. Publ. KAO no.8:102-111 '59. (MIRA 17:9)
(Transit circle--Testing)

S/035/60/000/006/007/038
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 6, p. 18, # 5006

AUTHORS: Osipov, A. K., Chernega, N. A.

TITLE: Observations of the Partial Lunar Eclipse of 1959, March 24, at the Astronomical Observatory of the Kiyev University

PERIODICAL: Astron. tsirkulyar, 1959, iyunya 5, No. 202, pp. 1-2

TEXT: Observations of the eclipse were conducted with Zeiss field glasses (D = 80 mm, F = 500 mm, 40x). The instants of the first and the last contacts were recorded; their differences relative to the pre-calculated instants amount to $+1^s.4$ and $+0^s.1$, respectively. The instants are also given of entering the umbra and re-appearance from it of various formations of the lunar surface.

G. V. Z.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

CHERNEGA, N. A., Cand Phys-Math Sci — (diss) "A catalog of direct ascensions of the stars of the FKSZ and investigation of the meridian circle with the Astronomical observatory of Kiev University," Leningrad, 1960, 11 pp, 200 cop. (Main Astronomical Observatory, AS USSR) (KL, 42-60, 111)

CHERNEGA, N.A.

PHASE I BOOK EXPLOITATION SOV/5721

Vsesoyuznaya astrometricheskaya konferentsiya.

Trudy 14-y Astrometricheskoy konferentsii SSSR, Kiyev, 27-30 maya 1958 g. (Transactions of the 14th Astrometrical Conference of the USSR, Held in Kiyev 27-30 May 1958) Moscow, Izd-vo AN SSSR, 1960. 440 p. Errata slip inserted. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Glavnaya astronomicheskaya observatoriya (Pulkovo).

Resp. Ed.: M. S. Zverev, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: N. K. Zaychik; Tech. Ed.: R. A. Zemlyanova.

PURPOSE: The book is intended for astronomers and astrophysicists, particularly those interested in astrometrical research.

COVERAGE: This publication presents the Transactions of the 14th Astrometrical Conference of the USSR, held in Kiyev 27-30 May 1958. It includes 27 reports and 55 scientific papers presented at the plenary meeting of the Conference

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and at the special sectional meetings. An appendix contains the resolutions adopted by the Conference, the composition of the committees, the agenda, and the list of participants at the Conference. A brief summary in English is given at the end of each article. References follow individual articles. The Presidium of the Astrometrical Committee (Chairman M. S. Zverev), which supervised the preparation of this publication, expresses thanks to the members of the secretariat: V. M. Vasil'yev, I. G. Kol'chinskiy, A. B. Omegina, and Kh. I. Potter.

TABLE OF CONTENTS:

CHERNEGA, N.A.

Corrections to right ascensions of some FK3 stars. Astron.tsir. no.210:15-16 Ap '60. (MIRA 13:9)

1. Astronomicheskaya observatoriya Kiyevskogo gosudarstvennogo universiteta.

(Stars)

OSIPOV, A.K.; CHERNEGA, N.A.

Observation of a fireball in Kiev. Astron.tsir. no.222:27 My '61. (MIRA 15:4)

1. Astronomicheskaya observatoriya Kiyevskogo universiteta.
(Meteors)

BOGORODSKIY, A.F.; CHERNEGA, N.A.

Mitrofan Fedorovich Khandrikov (1837-1915). Ist.-astron.issl. no.8: 297-329 '62. (MIRA 16:3)
(Khandrikov, Mitrofan Fedorovich, 1837-1915)

DROFA, V.K.; CHERNEGA, N.A.

Device for photographing transit-circle readings. Publ. KAO no.11:92-97 '62. (MIRA 16:7)
(Transit circle)

TURENKO, A.N., kand.tekhn.nauk; CHERNEGOV, A.A., inzh.

Improvement of the production technology is a means to cut coal costs. Ugol' Ukr. 3 no.9:42-43 S '59. (MIRA 13:2)

1. Kiyevskiy politekhnicheskiy institut (for Turenko).
2. Baydakovskiy ugol'nyy razrez (for Chernegov).
(Coal mines and mining--Costs)

KOVSHULYA, A.A., kand.tekhn.nauk; PECHKOVSKIY, V.I., kand.tekhn.nauk; KAL'CHIK, G.S., gornyy inzh.; CHERNEGOV, A.A., gornyy inzh.

Response to P.M.Kovachevich's article "Method of determining the approximate values of mining output in the design and planning of coal mines." Ugol' 36 no.7:47-48 Jl '61. (MIRA 15:2)
(Mining engineering) (Kovachevich, P.M.)

KOVSHULYA, A.A., kand.tekhn.nauk; PECHKOVSKIY, V.I., kand.tekhn.nauk; KAL'CHIK, G.S., gornyy inzh.; CHERNEGOV, A.A., gornyy inzh.

Commentary on the article by L.A.Mizernitskii "Annual production of an iron mining and dressing combine." Gor.zhur. no.2:74-75 F '61. (MIRA 14:4)

1. Institut gornogo dela AN USSR, Kiyev.
(Ore dressing)
(Mizernitskii, L.A.)

PECHKOVSKIY, V.I., kand. tekhn. nauk; CHERNEGOV, A.A., gornyy inzh.; NECHITAYLO, A.A., gornyy inzh.

Efficient means of draining pit areas of the Nikopol' manganese deposit. Gor. zhur. no.2:28-30 F'62. (MIRA 17:2)

1. Institut gornogo dela AN UkrSSR (for Pechkovskiy, Chernegov). 2. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut ugol'noy, rudnoy, neftyanoy i gazovoy promyshlennosti UkrSSR (for Nechitaylo).

KAL'CHIK, G.S., inzh.; CHERNEGOV, A.A., inzh.

Mechanical properties of rocks in pit sides. Izv.vys.ucheb.zav.; gor.zhur. 5 no.2:86-91 '62. (MIRA 15:4)

1. Institut gornogo dela AN USSR. Rekomendovana laboratoriyey po razrabotke redkikh i tsvetnykh metallov.
(Strip mining) (Rocks--Testing)

PECHKOVSKIY, V.I.; CHERNEGOV, A.A.

Joint stripping of adjacent pit areas. Nauch.zap.Ukrniiproekta no.5:119-121 '61. (MIRA 15:7)
(Ukraine—Strip mining)

*PECHKOVSKIY, V.I.; CHERNEGOV, A.A.

Reducing the volume of trenches in general stripping of deposits. Trudy Inst.gor.dela AN URSR no.11:92-94 '62. (MIRA 16:2)
(Strip mining) (Earthwork)

CHERNEGOV, A.A.; PECHKOVSKIY, V.I.

Determination of the winter reserves of minerals and their effect on the dimensions of transporter bridges. Trudy Inst. gor.dela AN URSR no.11:101-105 '62. (MIRA 16:2)
(Strip mining--Cold weather operations)
(Transporter bridges)

STARIKOV, N.A. [deceased]; KOVSHULYA, A.A.; PECHKOVSKIY, V.I.; KAL'CHIK, G.S.; CHERNEGOV, A.A.

Essential data for engineering geological studies of rocks in deposits. Trudy Inst.gor.dela AN URSR no.11:66-69 '62. (MIRA 16:2)

(Rocks—Testing)

PECHKOVSKIY, V.I.; CHERNEGOV, A.A.

Determining stability characteristics of clay rocks in sides. Trudy Inst.gor.dela AN URSR no.11:89-91 '62. (MIRA 16:2)
(Clay--Testing)

FIDELEV, Aleksandr Savel'yevich; ZHERBIN, Mikhail Mikhaylovich; CHERNEGOV, A.A., inzh., retsenzent; AFONINA, G.P., red. izd-va; BEREZOVYY, V.N., tekhn. red.

[Trackless trolley-truck transportation] Trolleivoznyi transport. Kiev, Gostekhizdat USSR, 1963. 104 p. (MIRA 16:9)

(Mine haulage)
(Local transit--Equipment and supplies)

DEMCHENKO, Viktor Vasil'yevich, inzh.; PECHKOVSKIY, Vsevolod Ivanovich, kand.tekhn. nauk; CHERNEGOV, Aleksandr Aleksandrovich, inzh.; NECHITAYLO, Aleksandr Aver'yanovich, inzh.; KAL'CHIK, Georgiy Semenovich, inzh.; BELYAKOV, Yu.I., kand. tekhn. nauk, retsenzent; SEMENENKO, M.D., inzh., red.izd-va; STARODUB,T.A., tekhn. red.

[Improvement of open-pit manganese mining in the Ukrainian S.S.R.] Sovershenstvovanie otkrytykh razrabotok margantsevykh rud USSR. Kiev, Gostekhizdat USSR, 1963. 119 p.
(MIRA 16:8)
(Nikopol' region--Manganese mines and mining)

YATSKIKH, Valerian Grigor'yevich, kand. tekhn.nauk; SKAFA, Boris Filippovich, kand.tekhn.nauk; KAPLUNOV, Ivan Zakharovich, inzh.; CHERNEGOV, A.A., inzh., retsenzent; SEMENENKO, M.D., inzh., red.izd-va; SHAFETA, S.M., tekhn. red.

[Mechanization of mining pitching coal seams] Mekhanizatsiia vyemki krutopadaiushchikh ugol'nykh plastov. Kiev, Gos.izd-vo tekhn.lit-ry USSR, 1963. 201 p. (MIRA 16:8)
(Coal mining machinery)

KOVSHULYA, A.A., kand. tekhn. nauk; PECHKOVSKIY, V.I., kand. tekhn. nauk; KAL'CHIK, G.S., inzh.; CHERNEGOV, A.A., inzh.

Possibilities of using sound measuring to deterimie slope areas presenting a danger of landslides. Nauch. zap. Ukrniiproekta no.10: 48-57 '63. (MIRA 17:6)

KOVSHULYA, A.A., kand.tekhn.nauk; PECHKOVSKIY, V.I., kand.tekhn.nauk; KAL'CHIK, G.S., gornyy inzh.; CHERNEGOV, A.A., gornyy inzh.

Readers' response to the article by S.N.Nikitin "Determining the expected slipping surface according to stresses in the strip mine slope."; "Ugol'", 1962, No.1. Ugol' 38 no.3:62 Mr '63.
(MIRA 18:3)

KOVSHULYA, A.A., kand. tekhn. nauk; PECHKOVSKIY, V.I., kand. tekhn. nauk; CHERNEGOV, A.A.; KAL'CHIK, G.S.

Advantageousness of mining the Pokrov-Kireyevo flourite deposit. Met. i gornorud. prom. no.3:58-59 My-Je '64. (MIRA 17:10)

L 24622-66 EWT(l)/EWT(m)/EPF(n)-2/EWP(j)/T/ETC(m)-6 IJP(c) GG/RM/WW

ACC NR: AP6012436 (A) SOURCE CODE: UR/0364/65/001/012/1434/1442

91
87
8

AUTHOR: Dogonadze, R. R.; Kuznetsov, A. M.; Chernenko, A. A.

ORG: Institute of Electrochemistry, Academy of Sciences, SSSR (Institut elektrokhimii Akademii nauk SSSR)

21

TITLE: Theory of low-energy electrons in liquids

SOURCE: Elektrokhimiya, v. 1, no. 12, 1965, 1434-1442

TOPIC TAGS: electron mobility, polar crystal, liquid property, high temperature effect, low temperature effect, temperature dependence, electric conductivity

ABSTRACT: Recent data are given from the theory of electron mobility in polar crystals as a basis for explaining the physical mechanism responsible for electrical conductivity in liquids. The theory of electron mobility in polar liquids is qualitatively analyzed with no attempt to derive any new formulas. The problem of electron mobility in nonpolar liquids is studied in greater detail since there is no satisfactory theory for this case at the present time. A qualitative model is proposed for the structure of the electron energy spectrum in a nonpolar liquid and analytical expressions are derived for electron mobility as a function of temperature in this case. It is shown that the temperature dependence of electron mobility in nonpolar liquids is qualitatively similar to the case of small-radius polarons in polar liquids. At

UDC: 541.13 + 541.15

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low temperatures, dispersion increases with temperature while the probability of electron migration decreases, which reduces mobility. On the other hand, mobility should increase with temperature when dispersion is high. We are grateful to corresponding member AN SSSR V. G. Levich for constant interest in the work, as well as to V. L. Bonch-Bruyevich, V. V. Tolmachev and Yu. A. Chizmadzhev for numerous discussions. Orig. art. has: 2 figures, 29 formulas.

SUB CODE: 07/ SUBM DATE: 04Aug65/ ORIG REF: 013/ OTH REF: 009

Card 2/2

KRASNIKOV, A.S., starshiy nauchnyy sotrudnik, kand.tekhn.nauk; CHERNEGOV, Yu.A., mladshiy nauchnyy sotrudnik

Technical efficiency of rotary excavators. Ugol' 36 no.5:48-51 My '61. (MIRA 14:5)

1. Institut gornogo dela im. A.A.Skochinskogo.
(Excavating machinery)

CHERNEGOV, Yu.A.

Combined determination of the parameters of systems of strip mining and haulage equipment when using powerful rotary-bucket excavators. Nauch.soob.IGD 14:3-15 '62. (MIRA 16:1)
(Strip mining) (Excavating machinery)

CHERNEGOV, Yu.A., kand.tekhn.nauk; ALEYNIKOV, B.I., inzh.

Methods of selecting the parameters of working faces in automatic programming control of rotary excavators. Nauch.soob.IGD 24:84-94 '65. (MIRA 18:10)

MEL'NIKOV, Nikolay Vasil'yevich, akademik; SIMKIN, Boris Aleksandrovich, kand. tekhn. nauk; DEMIDYUK, Grigoriy Prokop'yevich, kand. tekhn. nauk; VINITSKIY, Konstantin Yefimovich, kand. tekhn. nauk; STAKHEVICH, Yekaterina Borisovna, inzh.; KRASNIKOV, Aleksey Sergeyevich, kand. tekhn. nauk; CHERNEGOV, Yuriy Aleksandrovich, inzh.; POTAPOV, Mikhail Gennad'yevich, kand. tekhn. nauk; CHESNOKOV, Mitrofan Mitrofanovich, kand. tekhn. nauk; NURMUKHAMEDOVA, V.F., red. izd-va; SHKLYAR, S.Ya., tekhn. red.

[Foreign technique of open-pit mining]Tekhnika otkrytykh gornykh rabot za rubezhom. Moskva, Gosgortekhizdat, 1962. 379 p. (MIRA 16:1)

(Strip mining)

VETROV, Yu.A.; MARICH, N.V.; KRASNIKOV, A.S.; CHERNEGOV, Yu.A.; SHENDEROV, A.I.

Selecting the efficient operating conditions for a high-capacity rotary excavator. Ugol' 37 no.9:26-29 S '62. (MIRA 15:9)
(Excavating machinery)

CHERNEGOV, Yu.A., inzh.

Using standard and special continuous equipment in working benches of various heights. Nauch. soob. IGD 20:3-10 '63. (MIRA 16:10)

(Mining machinery)

KRASNIKOV, A.S., kand. tekhn. nauk; CHERNEGOV, Yu.A., kand. tekhn. nauk

Flow-sheets of open pit mining of manganese in U.S.S.R. deposits.
Gor. zhur. no.7:20 Jl '64. (MIRA 17:10)

1. Institut gornogo dela im. A.A. Skochinskogo.

KHOKHLOVKIN, D.M., red.; CHERNEGOVA, E.N., red.; IL'INSKAYA, G.M., tekhn. red.

[From work practices on deep mine drainage] Iz opyta raboty po glubinnomu vodoponizheniiu. Moskva, Gosgortekhizdat. No.1. [Improving techniques of deep mine drainage] Usovershenstvovanie tekhniki glubinnogo vodoponizheniia. Pod obshchei red. D.M.Khokhlovkina. 1962. 47 p. (MIRA 15:7)

1. Vsesoyuznoye soveshchaniye rabotnikov elektromekhanicheskoy sluzhby organizatsii tresta Soyuzshakhtoosusheniye, Tula. (Mine drainage)

ORLOV, Vasiliy Vasil'yevich; YANCHUR, Aleksandr Mikhaylovich; RABICHEV, Nikolay Semenovich; PETROV, Anatoliy Moiseyevich; PONOMARENKO, Alekscy Kuz'mich; GUDZ', Aleksandr Grigor'yevich; POKROVSKIY, N.M., zasl. deyatel' nauki i tekhniki RSFSR, prof., doktor tekhn. nauk, retsenzent; CHERNEGOVA, E.N., ved. red.

[Mine workings and their support] Provedenie i kreplenie gornykh vyrabotok. [By] V.V.Orlov i dr. Moskva, Nedra, 1965. 496 p. (MIRA 18:7)

CHERNEKHOVSKAYA, M.D.

ROMANOVA, Ye.P.; MOSKOVICH, E.G.; MALKOVA, M.N.; CHERNEKHOVSKAYA, M.D.

Pregnancy and labor in diabetes mellitus [with summary in English, p.125-126] Probl.endok. i gorm. 3 no.4:58-66 Jl-Ag '57.
(MIRA 10:12)

1. Iz Instituta akusherstva i ginekologii Ministerstva zdravookhraneniya RSFSR (dir. L.G.Stepanov) i kafedry endokrinologii TSentral'nogo instituta usovershenstvovaniya vrachey (zav. - zasluzhennyy deyatel' nauki prof. N.A.Shereshevskiy)

(DIABETES MELLITUS, in pregnancy, (Rus))
(PREGNANCY, in various idseases, diabetes mellitus (Rus))

CHERNEKHOVSKAYA, M.D.

KELLAT, G.A., starshiy nauchnyy sotrudnik; CHERNEKHOVSKAYA, M.D., kandidat meditsinskikh nauk

Treatment of menopausal disorders by cervico-facial ionogalvanization [with summary in English] Akush. i gin. 33 no.3:71-74 My-Je '57. (MLRA 10:8)

1. Iz Instituta akusherstva i ginekologii (dir. L.G.Stepanov) Ministerstva zdravookhraneniya RSFSR

(CLIMACTERIC, FEMALE, compl. ther., cervico-facial ionogalvanization (Rus))

CHERNEKHOVSKAYA, M.D.

LESNOY, S.K.; YERMINA, M.S.; CHERNEKHOVSKAYA, M.D.; BELOUSOVA, Z.K.; BOVE, M.V.

Sterility diagnosis and examination for women of childless marriages. Vop.okh.mat.i det. 3 no.2:69-73 Mr-Ap '58. (MIRA 11:3)

1. Iz Nauchno-issledovatel'skogo instituta akusherstva i ginekologii Ministerstva zdravookhraneniya RSFSR.
(STERILITY)

CHERNEKI, I.M. [Chernsky, I.M.]

Embryology of the second flowering of apple trees in Transcarpathia. Ukr. bot. zhur. 19 no.6:23-29 '62. (MIRA 16:2)

1. Uzhgorodskiy gosudarstvennyy universitet, laboratoriya tsitologii i embriologii.
(Transcarpathia —Plants, Flowering of) (Transcarpathia—Apple)

CHERNEKI, I.M.

Biology of apple tree flowering under the conditions of Transcarpathia. Nauk. zap. UzhGU 49:3-9 '62. (MIRA 18:2)

CHERNYLEVSKIY, Yu.

Creators of the hearts of machinery. Izobr.i rats. no.12:58-59 D '60. (MIRA 13:12)
(Inventors)

CHERNENKOV, M.

Operating practice of machine-tractor stations. Prof.-tekh.obr.11 no.8:13-14 N '54. (MLRA 8:1)

1. Ispolnyayushchiy obyazannost' zamestitelya direktora po uchebno-proizvodstvennoy chasti uchilishcha mekhanizatsii sel'skogo khozyaystva No.9 (g. Lipetsk).
(Machine-tractor stations)

CHERNEN'KAYA, Ye.I.; FIDEL'MAN, B.M.

Some physicochemical properties of solutions of 5/6 basic aluminum chloride. Ukr. khim.zhur. 29 no.9:908-911 '63. (MIRA 17:4)

1. Khar'kovskiy nauchno-issledovatel'skiy institut osnovnoy khimii.

CHERNEN'KIY, K.I.

Effect of prolonged use of a ginseng preparation on the physical and mental capacity for work in man. Mat. k izuch. zhen'-shenia i lim. no.2:166-170 '55. (MLRA 9:10)

(GINSENG--PHYSIOLOGICAL EFFECT)

CHERNEN'KIY, I. K.

USSR / Pharmacology, Toxicology. Analeptics U-3

Acs Jour : Referat Zh.-Biol., No 1, 1958, No 3372

Author : Chernen'kiy, I.K.

Inst : Not given

Title : An Ergographic Study of the Stimulating Effects of Ginseng and Phenamine

Orig Pub : Materialy k izuchiyu zhen'shenya i limonnika. Vyp. 2. N.-L., AN SSSR, 1955, 171-173.

Abstract : By means of a self-constructed ergometer, muscular efficiency was determined in 15 22-37 year-old male subjects. After the administration of 30 ml of 3% tincture of ginseng muscular efficiency increased by 15%. 1 g of the root of cultivated ginseng increased muscular efficiency by 24% and 30 ml of a 3% tincture of wild growing

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USSR / Pharmacology. Toxicology. Analeptics U-3

Abs Jour : Referat Zh.-Biol., No 1, 1958, No 3372

Abstract : ginseng - by 36%. Phenamine (0.02 g) caused an increase in muscular efficiency of 16%. It also produced excitement and insomnia. No side effects were observed after the administration of ginseng.

Card : 2/2

CHERNENKO, A.

Toward higher labor productivity. Sots. trud 6 no.12:103-108 D '61. (MIRA 14:11)

1. Nachal'nik shakhty "Gigant", Krivoy Rog.
(Krivoy Rog Basin--Iron mines and mining--Labor productivity)

GRAFOV, B. M.; CHERNENKO, A. A.

Passage of direct current through a binary electrolyte solution (asymmetric electrolyte). Zhur. fiz. khim. 37 no. 3:664-665 Mr '63. (MIRA 17:5)

1. Institut elketrokhimii AN SSSR.

C.A. CHERNENKO, A.A.

21

Wood pitch. A. A. Chernenko and I. I. Borisov. *Za Ekon. Topliva* 7, No. 5, 33-7(1950).—Dehydration and distn. of wood pitch give a solid and liquid fuel, both of which have high heat values and are easily burned in any type of burner. Losses during distn. are small and can be reduced with experience. The pitch obtained during operation of gas generators with mixed woods has the following characteristics: d. 1.2; 35-40% H_2O; heat value 4000-4200 kcal./kg.; min. viscosity at 60-110° about 12.5° Engler; flash point 135°; and burns with a smoky flame. After distn. the liquid fuel has the following characteristics: viscosity 1.5° Engler; flash point 81°; and heat value 8800-9000 kcal./kg. The solid residue (pitch coke) is a spongy solid contg. 74-5% C and has a heat value of 7000-7200 kcal./kg.

Paul W. Howerton

DOGONADZE, R.R.; KUZNETSOV, A.M.; CHERNENKO, A.A.

Theory of homogeneous and heterogeneous electronic processes in liquids. Usp.khim. '34 no.10:1779-1812 O '65.
(MIRA 18:11)

1. Institut elektrokhimii AN SSSR.

32089
S/181/61/003/012/024/028
B108/B138

24,7700 (1144, 1160, 1164)

AUTHORS: Dogonadze, R. R., Chernenko, A. A., and Chizmadzhev, Yu. A.

TITLE: Electrical conductivity of polar crystals with low carrier mobility. II. Calculation of mobility

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TEXT: In the first part of this work(FTT, v. 3, no. 12, 1961, 3712-3719) it was established that the wave function obtained for the band polaron was not an exact eigenfunction of the Hamiltonian, leading to the scattering of the band states. The scattering probability is calculated with the Dirac perturbation theory (strong electron-phonon interaction). On the basis of these calculations, the expression

$$dw_{\sigma\sigma'} = \frac{I^2}{\hbar^2\omega\,(2\pi)^2}\, e^{-2S} \sum (\sigma,\ \sigma')\, d\sigma', \qquad (1,20)$$

with

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$$\sum(\sigma, \sigma') = Z_0(4A\sqrt{\bar{N}(\bar{N}+1)})[6 + \sum_i \cos a_i(\sigma + \sigma')] +$$

$$+ Z_0(2A\sqrt{\bar{N}(\bar{N}+1)})[(\sum_i(\cos\sigma a_i + \cos\sigma' a_i))^2 - \quad (1,21).$$

$$- 2\sum_i \cos a_i(\sigma + \sigma') - 12].$$

is obtained for the differential polaron scattering cross section. From this expression the lifetime of the band states can be found:

$$\tau_b = \frac{\hbar^2\omega}{12\pi I^2} e^{2S} \frac{1}{I_0(4A\sqrt{\bar{N}(\bar{N}+1)}) - 1} \quad (1.22).$$

The band-theoretical treatment of the kinetic processes is not applicable at $l \lesssim a$ (l = free path, a = lattice constant). The criterion for this is $\frac{h\omega}{\pi I} \exp A(2\bar{N}+1) \frac{1}{I_0 - 1} \approx 1$ (1.25). Mobility in the range where the band approximation is not applicable is calculated on the basis of electron transitions between localized states

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$$u = \frac{e\alpha^{1/2}}{2\hbar kT}\sqrt{\frac{\pi}{kTE^*}}\,e^{-\frac{E^*}{kT}}. \qquad (2,23).$$

The results agree well with the experiments. The authors thank Corresponding Member AS USSR V. G. Levich for his interest, and V. L. Bonch-Burevich, S. I. Pekar, and S. V. Tyablikov for discussions. There are 4 figures and 6 references: 2 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: R. P. Feynman. Phys. Rev., 84, 108, 1951; R. Kubo, Y. Toyozawa. Progr. Theor. Phys., 13, 160, 1955; J. Yamashita, T. Kurosawa. J. Phys. Chem. Sol., 5, 34, 1958.

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On the theory of capillary equilibrium in a porous body. Dokl. AN SSSR 151 no.2:392-395 Jl '63. (MIRA 16:7)

1. Predstavleno akademikom A.N.Frumkinym.
(Porous materials) (Capillarity)